

Appointing an assistant to move the Prism to and fro about its Axis, that all the Colours might successively fall on that part of the Paper which I saw by reflexion from that part of the Glasses, where the Circles appeared, so that all the Colours might be successively reflected from the Circles to my Eye whilst I held it immovable, I found the Circles which the red Light made to be manifestly bigger than those which were made by the blue and violet. And it was very pleasant to see them gradually swell or contract according as the Colour of the Light was changed. The interval of the Glasses at any of the Rings when they were made by the utmost red Light, was to their interval at the same Ring when made by the utmost violet, greater than as 3 to 2, and less than as 13 to 8, by the most of my Observations it was as 14 to 9. And this proportion seemed very nearly the same in all obliquities of my Eye; unless when two Prisms were made use of instead of the Object-Glasses. For then at a certain great obliquity of my Eye, the Rings made by the several Colours seemed equal, and at a greater obliquity those made by the violet would be greater than the same Rings made by the red. The refraction of the Prism in this case causing the most refrangible rays to fall more obliquely on that plate of the Air than the least refrangible ones. Thus the Experiment succeeded in the coloured Light, which was sufficiently strong and copious to make the Rings sensible. And thence it may be gathered, that if the most refrangible and least refran-

refrangible rays had been copious enough to make the Rings sensible without the mixture of other rays, the proportion which here was 14 to 9 would have been a little greater, suppose  $14\frac{1}{4}$  or  $14\frac{1}{5}$  to 9.

Whilst the Prism was turn'd about its Axis with an uniform motion, to make all the several Colours fall successively upon the Object-Glasses, and thereby to make the Rings contract and dilate: The contraction or dilation of each Ring thus made by the variation of its Colour was swiftest in the red, and slowest in the violet, and in the intermediate Colours it had intermediate degrees of celerity. Comparing the quantity of contraction and dilation made by all the degrees of each Colour, I found that it was greatest in the red; less in the yellow, still less in the blue, and least in the violet. And to make as just an estimation as I could of the proportions of their contractions or dilations, I observed that the whole contraction or dilation of the Diameter of any Ring made by all the degrees of red, was to that of the Diameter of the same Ring made by all the degrees of violet, as about four to three, or five to four, and that when the Light was of the middle Colour between yellow and green, the Diameter of the Ring was very nearly an arithmetical mean between the greatest Diameter of the same Ring made by the utmost red, and the least Diameter thereof made by the utmost violet: Contrary to what happens in the Colours of the oblong Spectrum made by the refraction of a Prism, where the red is most contracted, the violet most expanded, and

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